WATER LEGISLATION AND PRICING IN KAZAKSTAN

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ABSTRACT

This paper describes recent efforts by the Republic of Kazakstan to introduce a new system of water charges. It draws on the collaboration between the Central Asia office of the Harvard Institute for International Development (HIID) and the Kazakstan Committee for Water Resources on issues of institutional reform of the country's water sector and, specifically, on issues related to water pricing. It also draws on HIID's close contacts with the Asian Development Bank's advisory team to the Committee for Water Resources and the Ministry of Agriculture. The paper includes a detailed analysis of Kazakstan's new Government Resolution on Payment for the Use of Surface Water Resources and concludes with a number of recommendations for possible future policy assistance.

Because of the shared legacy of institutions and infrastructure inherited from the former Soviet Union, many of the paper's observations on the water sector in Kazakstan also apply—with a few modifications—to the other four former Soviet republics of Central Asia (the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan).

1. INTRODUCTION: THE WATER SECTOR AND WATER CHARGES IN KAZAKSTAN

1.1 Historical background

The Central Asian region in general, and the Republic of Kazakstan in particular, is marked by very high use (consumption) levels of water in all sectors of the economy (agricultural, industrial, household). To a large extent this is the result of the former Soviet economy's orientation towards material output growth which paid little or no attention to the underlying scarcity value of natural resource inputs, including water (see also Boyd [3]).

In the Soviet economic system, which "was organized like one large factory," (Kasenov, [7]) most of Central Asia was assigned to be a provider of raw materials—primarily agricultural produce and minerals—to the industrial heartlands in the Slavic republics (Russia, Ukraine, and Belarus). The expansion of irrigated agriculture in Central Asia from the late 1940s onwards peaked in the "virgin lands campaign" in the mid-1950s, when vast stretches of land in northern and central Kazakstan were converted to agriculture. This was followed by the substantial expansion of the irrigated area for cotton and rice production in Uzbekistan and southern Kazakstan.

Irrigated agriculture is now by far the largest water consumer in Central Asia, accounting for more than 90 percent of all water withdrawals in the Aral Sea Basin (Boyd [2], Boyd [3], Micklin [9]). In Uzbekistan and Turkmenistan, agriculture accounts for slightly more than 90 percent of all water withdrawals (Kudaybergenov [13], Micklin, [10]). In the Syr Darya Basin of southern Kazakstan, agriculture's share in water use is about 85 percent, while for the whole of Kazakstan its share is about 75 percent, leaving industry with about 19 percent and households with the remaining 6 percent (Kudaybergenov, [13]). At the same time, the agricultural sector, in which irrigated agriculture has a dominant share, continues to be a mainstay of the Central Asian economies, contributing around 30 percent to the Gross Domestic Product in four of the five Central Asian republics (Kazakstan, the Kyrgyz Republic, Turkmenistan, Uzbekistan) [Anderson [1], Britton [4], World Bank publications. Recent data for Tajikistan not available].

The large-scale irrigation schemes have led to the steady and continuing desiccation of the Aral Sea, an unparalleled environmental disaster. Once the fourth largest inland water lake in the world, covering slightly more than 66,000 km^2, the near total diversions of the Amu Darya and Syr Darya river flows for irrigation have shrunk it to a saline lake of less than half its 1960 surface area. The sea level has fallen 15 meters and the subsequent tripling of salinity levels has devastated regional ecosystems. The once prospering fishing industry has been destroyed and there have been drastic declines in human health levels in the region.[1]

The development of incentives for more rational and economical use of the region's limited water resources is an important element in any comprehensive program to address the Aral Sea crisis. Attempts to improve on current management methods for water delivery, irrigation, and drainage systems must therefore be matched by efforts to establish more realistic systems of water pricing in the Central Asian Republics.

1.2 Kazakstan's Committee for Water Resources

The Kazakstan Committee for Water Resources is the successor to the Ministry for the Water Economy of the former Kazakh Socialist Soviet Republic (KazSSR). The main functions of the former KazSSR Ministry for the Water Economy were to oversee and balance the water needs of all sectors of the

[1] The two natural deserts, the *Kara-Kum* ("black sand") and the *Kyzyl-Kum* ("red sand") deserts (lying in present-day Turkmenistan and Uzbekistan/southern Kazakstan respectively), have thus been joined by a third, man-made desert, sometimes referred to as *Ak-Kum* ("white sand") or *Aral-Kum* ("Aral sand").

economy (agricultural, domestic, and industrial) as well as to authorize water consumption by individual water users in Kazakstan, including farms. With agriculture being by far the largest water user in Kazakstan, the Ministry for the Water Economy therefore served to some degree as a "counterweight" to the more powerful KazSSR Ministry of Agriculture. The status of the Ministry for the Water Economy was reduced repeatedly in the 1990s, beginning with its demotion to the State Committee for Water Resources in 1991. This process culminated with its incorporation as the Committee for Water Resources into the Ministry of Agriculture in March 1997.[2]

The Committee for Water Resources within the Ministry of Agriculture is organized into a central (republican) head office, eight River Basin Authorities (one for each of the major river basins in the country), Oblast Committees (corresponding to the fourteen administrative oblasts of the Republic of Kazakstan), and Raion Committees (with responsibility for inter-farm irrigation and drainage systems in each raion or district). The Committee is funded out of the republican (state) budget. From its annual allocation, the Committee for Water Resources distributes funds to all lower-standing water agencies and offices, including water system management authorities. As a result of the country's general economic downturn after the breakup of the Soviet Union, the Committee for Water Resources has been regularly underfunded for the past six years. This has led to even further deterioration of already ill-maintained and dilapidated water systems.[3]

1.3 Water Infrastructure

Similar to other infrastructure systems, the majority of Kazakstan's water extraction, storage, delivery, and monitoring systems is in a neglected and often ruinous state. To a large degree this stems from the Soviet legacy of shoddy construction and inadequate management of public utilities. As a consequence, many even relatively new facilities are in acute need of repair and reconstruction.

Water losses from seepage in irrigation systems caused by faulty canal linings exceed 50 percent in some areas (Kudaybergenov [8]).[4] The problem is compounded by inefficient irrigation methods, with the ratio of normative crop water needs to actual water withdrawals averaging about 40-50 percent in most parts of Central Asia (Kudaybergenov [8], Micklin [10]). Modern water-saving irrigation technology, such as drip irrigation which uses pipes to target small amounts of water directly at the root of plants, is

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[2] The Ministry of Geology and Subsurface Resources Protection has responsibility for all underground resources in Kazakstan. Although the basic water law in Kazakstan originally put the Committee for Water Resources in charge of all water sources (on the grounds that they constitute "a unified, inter-connected system"), the Government later transferred responsibility for groundwater to the Ministry of Geology ([15], [16]). In the government reorganization of 04 March 1997, parts of the Ministry of Geology were incorporated in the new Ministry of Energy and Natural Resources. In a further government reorganization on 10 October 1997, the Ministry of Energy and Natural Resources, the Ministry for the Economy and Trade, and the Ministry of Ecology and Bio-Resources were dissolved. In their place a Ministry of Ecology and Natural Resources, taking over the functions of the former Ministry of Ecology and Bio-Resources and parts of the responsibilities of the former Ministry of Energy and Natural Resources, and a Ministry of Energy, Industry and Trade, taking over the functions of the former Ministry of Energy and Natural Resources and parts of the responsibilities of the former Ministry for the Economy and Trade, were created. At present--October 1997--authority over surface waters resides with the Committee for Water Resources, and responsibility for groundwaters with the new Ministry of Ecology and Natural Resources. Several high-ranking officials, including representatives of the Committee for Water Resources itself, rightly argue for putting an end to the Committee for Water Resources's subordination to the Ministry of Agriculture and including it instead in the new Ministry of Ecology and Natural Resources.

[3] Before the breakup of the Soviet Union, all activities of the Committee for Water Resources were funded by the state budget. Since 1992, funding from the state budget has been limited to salaries and pensions for staff at the Committee's central office, River Basin Committees and Oblast Committees. There has been no funding from the state budget for District Committees. The District Committees have been mandated to obtain funding through collection of water service assessments from the water users. This has created a financial crisis throughout the Committee for Water Resources, but particularly in the districts (A. Hutchens, [5]).

[4] For instance, the shortage of construction materials for private purposes in the Soviet period gave rise to widespread "diversions" of such materials for personal use. Thus, the sale of mortar, bricks, etc. by state construction brigades "on the side" to private individuals frequently led to the use of "stretched cement," aggravated the deficit of required building materials, and ultimately led to the inadequate construction of public facilities.

practically nonexistent. In Almaty, the capital of Kazakstan, the combined effects of water loss due to faulty water pipes and water taps, the absence of realistic water pricing, and the lack of metering facilities have led to a per capita consumption of water which exceeds average per capita water consumption in Europe by as much as 400 percent (Nizhnikov [14]).

All major water extraction, storage, and delivery systems in Kazakstan are state property and are managed by water authorities under the Committee for Water Resources.[5] Many local water system management authorities in agricultural areas are no longer able to administer and maintain the inter-farm secondary and tertiary irrigation canals, pumping stations, and drainage systems which lie within their area of responsibility. In an effort to divest itself of this problem, and in the hope that the assumption of direct responsibility for these systems by farmers themselves will improve their management, the government has started a program of turning over some inter-farm irrigation and drainage systems to water user associations and other qualified legal entities. Because financing mechanisms to cover the high costs involved in operating and maintaining the systems have not been identified, there has to date been little interest among farmers and farmers' organizations in participating in the program to date ([17], Duzbaeva [12]).

1.4 Paying for Water Delivery

Water deliveries to agriculture were free during Soviet times. Households and industrial enterprises paid for water delivery, but mostly at rates far below cost-recovery levels. Very few residential buildings in Central Asia (and, for that matter, in the former Soviet Union in general) are fitted with water meters. As a rule, no water meters exist for individual household consumption; frequently only the aggregate water consumption of entire apartment blocks is measured. Throughout Central Asia (indeed, in most of the former Soviet Union), urban heat and water supply services are mostly still provided by large centralized distribution networks which have as yet not incorporated mechanisms for individual control and metering of consumption (see also Boyd [3]). Not surprisingly, the absence of individual meters and charges led to overconsumption of water in virtually all sectors of the economy.

In Central Asia today, farmers and households are still charged only a fraction of the true costs of their water supply. Only Kazakstan and the Kyrgyz Republic have made serious efforts at introducing more realistic water charges since 1992, trying to account for administration, operation, and maintenance costs of water storage and delivery systems, as well as establishing environmental charges for water pollution.[6] In Kazakstan, the virtually complete devolution of administrative responsibility for urban water systems to municipal water agencies has permitted raising charges for household and industrial water consumption toward cost-recovery levels in a number of cities. Charges for irrigation water, however, remain well below cost-recovery levels in most of Central Asia.

A charge system has existed in Kazakstan for several years to pay for the services associated with delivering water from a municipal or rural district water authority. Delivery charges are meant to cover only the costs of the "final" stage of the entire water storage and delivery chain, however—i.e. the costs

[5] The exceptions are urban and large district water delivery systems which are managed by municipal or large district water authorities. Municipal water authorities are not subordinate to the Committee for Water Resources, but are usually chartered as part of the system of municipal governance. They are responsible for the maintenance of all water systems located within their city and usually enjoy a fair degree of administrative autonomy. Municipal water authorities are endowed with price-setting and charge-collecting powers, but they require approval from the local anti-monopoly and tax committees for the level of water charges they intend to levy. The following are not owned and managed by the Committee: (1) water systems which are located on the territories of some medium- and large-scale industrial enterprises which themselves are responsible for the upkeep of these systems; (2) pumping stations on the territories of former state and collective farms which were turned over to their private successor organizations as part of the privatization process; and (3) small wells and pumps on private plots of land.

[6] For instance, with funds collected from charges levied on households and enterprises for water consumption exceeding set limits, the Kyrgyz Republic has recently begun a program of installing individual water meters in residential and commercial buildings.

of the water authority that ultimately releases water to residential buildings, industrial enterprises, or farmers. Households in municipal localities receive a monthly water bill which, absent water meters for individual flats or even for entire apartment buildings, charges them a flat average rate determined by the city water authority. Industrial enterprises pay an analogous bill, although individual water meters do exist for most medium-sized and large enterprises. Farmers also pay a monthly bill for the delivery of irrigation water. As most individual farming plots were part of a former collective or state farm, however, water meters often exist only for an entire irrigation system which serves several farmers, so that individual consumption cannot be measured separately. In practice, individual charges for the delivery of irrigation water are based on the "water-intensity" of the crop grown in any one year and on the total acreage of irrigated land of each farmer.

Water delivery charge rates are set by local water authorities themselves, under the supervision and with the approval of the local anti-monopoly and tax committees. As was noted above, only some municipal water authorities have succeeded in recouping their service costs through the water charges they set. Although some district water committees are now attempting to set their delivery charges for irrigation water at 100 percent of their combined operation, maintenance, and administration costs, the revenue collected from these charges is still far below cost recovery rates in virtually all rural areas.[7]

The costs arising in connection with all water services "upstream" of the final delivery systems, i.e. the maintenance and management of rivers, main canals, sluices, release gates, measuring and monitoring stations, flood control services, reservoir administration, etc., are not directly passed on to the final water users. They are instead covered by the budget of the Committee for Water Resources and of the State Hydro-Meteorological Service through re-distributions from the overall republican (state) budget.

1.5 Water Pollution Charges

Pollution of both surface and groundwaters in Kazakstan is widespread. Although water treatment facilities exist in urban localities and for most major industrial enterprises, many are unable to cope with the amount of wastewater they receive or with new kinds of industrial pollutants for which they were not designed (Boyd, [3]). Problems with the quality of potable water are likewise widespread.

For any water pricing system to be an effective tool for both quantity and quality management of water use, the price paid for a given quantity of water by its end user must at a minimum consist of a straightforward *cost-recovery* component that covers the expenses incurred in providing water to the final user, including management, delivery, treatment, etc.; and an *environmental externality* component that internalizes the share of the total social cost of water pollution caused by each water user. In addition, in a climatic area which is marked by high aridity and limited overall water supplies, such as most of Central Asia, the price for water should ideally also reflect both the *inter- sectoral opportunity cost* of allocating water to one sector rather than another and the *inter-temporal opportunity cost* of consuming stored water resources now, rather than conserving them for future use.[8]

A charge system for water effluents has been in place in Kazakstan for several years.[9] The system was developed in Soviet times explicitly to make industrial enterprises pay for the costs associated with the pollution they cause. Unlike cost-recovery charges for water use, pollution charges are defined, levied, and administered by the Ministry of Ecology and Bio-Resources (since October 1997 the Ministry of Ecology and Natural Resources) and its regional and local sub-divisions.

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[7] Hutchens reports that for 1995-96 only about 28 percent of the total assessments from rural water district committees have been paid. See [5], pp. 24-25.

[8] The existence of an intertemporal opportunity cost for water assumes that there is some long-term storage of water, either in groundwater reserves that are slow to recharge or in reservoirs.

[9] There is also a well developed system of charges for air emissions.

Kazakstan's existing pollution charge system sets different levels of payment for water discharges within and above "normative standards," taking into account the hydro-meteorological conditions of the polluter's location, the health effects of the polluting ingredients, and the nature of the discharge (short-/long-term concentrations). It is a serious attempt to implement the "polluter pays" principle. Application of the system and management of its revenues remain formidable problems, however. To some degree this is a function of the profound transition that Kazakstan's economy is undergoing (privatization, emergence of new enterprises, "splitting" and/or closure of old ones, lack of available funds, etc.). Other problems include the generally low level of pollution charges (certainly far below the social cost of pollution) and the fact that the system fails to account adequately for diffuse, non-point sources of pollution. This is particularly acute for the agricultural sector with its often inadequate drainage control systems and fertilizer, pesticide, and livestock waste runoff (Boyd [3]).[10]

2. THE WATER CODE OF THE REPUBLIC OF KAZAKSTAN

Kazakstan's Water Code, adopted in 1993, is the framework water law of the republic, the "constitution" for the water sector, as it were. It lays down the general legal and institutional principles of water use and water management for all types of water in Kazakstan (surface waters, groundwaters, mineral waters). The Water Code also specifies the rights and responsibilities for all main categories of water users in separate sections on industry, agriculture, the household sector, river and lake transport, etc.

For the purposes of the current discussion it is important to note that Kazakstan's Water Code distinguishes between two kinds of water use: "general water use" and "special water use. " General water use does not require official permission, is free of charge, includes water use with only insignificant effects on the quantity or quality of any given water body and/or water use, and does not require any special technical facilities (e.g. water from private draw-wells, open public wells in villages, etc.). All other kinds of water use are defined as special water use, require an official permit from the Committee for Water Resources (usually granted on an annual basis), and must be paid for.

The system of special water use was established to guarantee a fair and socially justifiable distribution of Kazakstan's limited water supply among different water users (consumers), with the Committee for Water Resources (for surface waters) and the Ministry of Geology (for groundwaters) responsible for monitoring water use and for maintaining safe and sustainable water balances in the country's main river basins.

The Water Code does not say much about the fees that are levied for obtaining "permits for special water use" beyond stating that revenues from these fees are to be spent on water-related tasks (measures for the protection and improvement of water bodies, water provision for the general population and for industry, flood control, construction and reconstruction of state-financed water facilities, etc.). In particular, the Water Code does not link the level of permit fees to the costs arising from the management and upkeep of the country's water resources or water facilities.

3. KAZAKSTAN'S NEW LEGISLATION ON WATER PRICING

3.1 Background

Over the course of 1996, the Kazakstan Parliament worked on a new law on payment for water. By September 1996, it had produced a draft which, in the view of several local and foreign specialists, constituted a reasonable overall basis for a workable system of water pricing. The approval of the draft law by the relevant Ministries was not forthcoming, however, holding up its passage by Parliament. As the Government of Kazakstan had pledged to review its water pricing policy, in particular for irrigation water, by early 1997 as a condition of several loan and assistance agreements (e.g. the World Bank's

[10] A detailed discussion of the pollution component of Kazakstan's water pricing system is beyond the scope of this paper. For a more comprehensive discussion and a detailed description of the existing pollution charge system, see Boyd [3].

Irrigation and Drainage Improvement Project and the Asian Development Bank's Agriculture Sector Program), it decided to establish a new legal framework for water pricing by means of a Government Resolution rather than a new law, thus circumventing the stalled coordination and approval process between Parliament and the relevant Ministries.[11] Accordingly, the Government created an inter-agency Working Group composed of representatives from fourteen ministries and state committees[12] and put the Committee for Water Resources in charge of coordinating the work on a new Government Resolution on Payment for Water.[13]

Realizing that Kazakstan's water sector is overly dependent on allocations from the state budget (which because of other pressing social needs have been significantly reduced in the last few years), and hoping to use the new Government Resolution as a vehicle for establishing sound, long-term pricing principles for improved water management, the Committee for Water Resources took the lead in the drafting process. Taking the Parliament's draft law on water payment of September 1996 as a departure point, the Committee sought to produce a comprehensive document which would "establish a more rational system of water pricing" (K. Kudaybergenov [8]), i.e. a system of water pricing in Kazakstan that would "(i) recover an increasing share of the water sector's O&M and administrative costs from the water users (consumers) themselves; and (ii) act as a stimulant for a more economical use of the country's scarce water supplies" [18].

Specifically, the Committee intended to include the following in the water pricing Resolution:

- define water charges for the current year;
- take account of the specifics of Kazakstan's current economic situation (depressed economic conditions, impoverishment especially in rural areas, payment arrears between enterprises, etc.), in the initial stages of setting water rates;
- entrench a mechanism for moving water rates into line with actual costs in the water sector in a gradual manner;
- account for differing water quality, relative scarcity, and the quality reductions and environmental damage caused by different water users in setting water rates; and
- pay heed to the institutional structure necessary to supports the chosen water charge system (i.e. procedures for collecting and disbursing water charges, oversight and control), taking into account the existing institutional system on the Republican, the oblast and the raion (district) level, the currently ongoing and expected changes in the ownership status of inter-farm irrigation, drainage and delivery infrastructure, as well as institutional reform in the irrigated agriculture sector (e.g. the formation of Water User Associations) [18].

As one of the mainstays of Kazakstan's economy, the agricultural sector had always been the recipient of special privileges and subsidies. Since any system of more realistic water charges would, in the long term, primarily affect the agricultural sector, the Kazakstan Committee for Water Resources' plans for a thorough reform of water charges in Kazakstan were both bold and forward-looking. Indeed, they are without precedent in the entire Central Asian region.

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[11] Although Parliament is the primary legislative organ in the Republic of Kazakstan, effectively a large part of the country's legislation is issued by the executive in the form of Presidential Decrees and Decisions and Government Resolutions. While laws passed by Parliament require presidential approval, Presidential Decrees ("having the force of law") can not be overturned by Parliament. Similarly, Government Resolutions do not require parliamentary approval.

[12] The inter-agency Working Group included one representative each from the Committee for Water Resources, the Kazakstan Hydro-Meteorological Service, the State Committee for Pricing and Antimonopoly Policy, the Ministry of Ecology and Bio-Resources, the Ministry of Industry and Trade, the Ministry of Finance, the Ministry of Geology, the Kazakh Scientific-Research Institute of Water Management, the Ministry of Agriculture, the Ministry of the Economy, the Research Institute "Kazgiprovodkhoz," the Main Tax Inspectorate, the State Privatization Committee, and the State Property Committee.

[13] The Resolution of the Government of Kazakstan on the Procedures for Calculation, Collection and Payment of Charges for the Use of Surface Water by Economic Sectors of the Republic of Kazakstan, No. 1227, 07 August 1997.

3.2 Water Charges in the Draft Resolution

For the following discussion of the process of drafting Kazakstan's new water pricing legislation, it should be borne in mind that the Government had charged the Committee for Water Resources with addressing questions of cost recovery in the water sector and the general "economic value of water."[14] The new Government Resolution was not meant to concern itself with the existing charge system for final water delivery services, nor was it meant to encompass water pollution charges.

Drawing on technical assistance provided by several international agencies,[15] the Committee for Water Resources presented its full draft of the new Government Resolution on Payment for Water Resources in the beginning of April 1997. Key provisions of that draft included:

- a stated commitment to introducing water charges to cover an increasing share of the costs of providing water to users (i.e. cost-based water pricing);
- the establishment of a separate fund in the national budget for the collection of receipts from water charges and their exclusive use for the water sector (i.e. the explicit allocation of water revenues to water-related tasks);
- a cost-based revenue allocation policy for water management authorities out of that fund;
- a stepwise increase of water charge rates for different water users; and
- transparency of rate-setting and revenue allocation (see [18]).

Some of the government agencies participating in the Working Group wished to set water charges at the cost-recovery level, while others favored charging for the "economic value of water." To reconcile these competing interests, the draft Resolution stated that water charges should be made up of two different components: a *base rate* which was supposed to compensate operation and maintenance costs for all main water systems in Kazakstan, and an *additional rate* for the "right to use water as a natural resource within the limits set by the special water rights." This latter rate was limited to no more than 10 percent of the base rate in all cases.[16]

The first component was therefore clearly a cost recovery charge, with what in essence was a limited water tax— the second component—attached to it. To the drafters from the Committee for Water Resources, who were very concerned about the political acceptability of introducing a comprehensive

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[14] This latter issue was to cause considerable confusion in the course of the drafting process. Some members of the Working Group, especially the representatives of the Ministry of Geology, saw the task of the document primarily as establishing a "rent" for the withdrawal of water, similarly to the "royalties" which the Ministry of Geology charges for the extraction of subsurface resources, including groundwater. Others members of the Working Group saw as the aim the establishment of a "water tax," which would partly, but not exclusively, go to cover the needs of the water sector. This confusion was aggravated by the fact that many government officials in Central Asia are unfamiliar with a wide range of economic terminology and economic principles. For instance, the Russian words for revenue/s, income/s (dokhod/y) and profit/s (pribyl/y) have frequently been used interchangeably, even in official documents. Likewise, the words charge, payment (plata, oplata), price (tsena), and tax (nalog) have frequently been used synonymously, as have rates (stavki, tarify) and tariffs (tarify). Moreover, pricing concepts such as marginal cost pricing and pricing mechanisms such as block prices are largely unknown to most government officials, including officials from the Ministry of the Economy, the Ministry of Finance, and the Anti-Monopoly and Pricing Committee. Indeed, some of these concepts are difficult to translate adequately into Russian.

[15] Organizations providing technical assistance included the Harvard Institute for International Development (consultant Dr. Donald Lauria), the Asian Development Bank (consultant Mr. Adrian Hutchens), and GTZ (the German Gesellschaft für Technische Zusammenarbeit) contractor C&E.

[16] Although all members of the Working Group had agreed that water, as a natural resource whose very existence requires no material or labor inputs, should not be charged for per se, they did agree that water has an "economic value" which could be expressed quantatively. This concept, which in essence corresponds to the "opportunity cost of water use," was subsequently used rather inconsistently and vaguely by the group. Unfortunately, there was little opportunity for the Working Group to develop that concept further, let alone explore methodological approaches to establishing the opportunity cost of water use in practice. Eventually, the majority of the Working Group reverted to their original concept of "value of water as a natural resource."

system of payment for water use for the first time in Kazakstan, it was very important to emphasize the "cost recovery character" of the water charge. Unfortunately, this provision did not survive the revisions to the draft Resolution that followed its initial presentation in April 1997.

3.3 Comparison of the Original Draft and the Final Resolution

The members of the inter-agency Working Group spent the four months following the April 1997 meeting revising the original draft. Each member worked primarily from his or her own agency's point of view, and little attention was paid to the opportunity for overall reform that the new legislation provided. A number of important changes were made to the original draft of the during the revision process. This section compares the provisions of the original (April 1997) draft with those of the final (August 1997) Resolution[17] in four areas: water resources included, cost recovery, timing of implementation, and use of charge revenues.

3.4 Water Resources Included in the New Government Resolution

Unlike the April draft, the final Resolution applies only to surface water—its provisions do not extend to groundwater.[18] The reason for this significant departure from the original draft was resistance from the (former) Ministry of Geology to what it saw as an infringement of its authority over groundwater.[19] After presentation of the draft document, the Ministry of Geology and the Anti-Monopoly Committee, both members of the inter-agency Working Group, successfully lobbied for exempting all groundwater resources from the new charge system, on the basis that charging for groundwater would constitute "double payment" for the resource, as the (former) Ministry of Geology already levies a "royalty" on groundwater extraction.[20]

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[17] Resolution of the Government of Kazakstan on the Procedures for Calculation, Collection and Payment of Charges for the Use of Surface Water by Economic Sectors of the Republic of Kazakstan, No. 1227, 07 August 1997.

[18] The Resolution of 07 August 1997 explicitly rescinds an earlier Government Resolution, No. 1774 of 31 December 1996, "On the establishment of payment for surface and groundwater resources" [italics added]. That earlier Resolution applied only to industrial enterprises, and up to the adoption of the new Government Resolution on 07 August 1997 it was the first and only attempt to introduce payment for the use of water resources other than service charges for the release of water. Interestingly, the rates set in the Resolution of 31 December 1996 exceed the rates of water charges for industrial enterprises defined in the new Government Resolution of 07 August 1997 by between 50 and 500 percent, depending on the river basin in which they apply.

[19] The Committee for Water Resources does operate a number of extraction and delivery facilities for potable groundwater, the operation costs of which it can therefore not pass on to the ultimate consumers through the charges defined in the new Government Resolution. For these specific facilities, the revenue deficit will not be negligible, as the extraction of groundwater is significantly more costly than the withdrawal of water from surface sources. Accordingly, the April draft document had provided for groundwater charges exceeding those for surface waters by a factor of about six. Fortunately, the number of such facilities is small.

[20] In theory, part of the revenues from groundwater royalties are supposed to be spent by the Ministry of Geology "on the restoration [replacement] and protection of subsurface resources," including groundwater. In practice, however, there is no real link between the level of "royalties" for groundwater extraction and the operation and maintenance costs of the related groundwater systems.

3.5 Approach to Cost-Recovery

The establishment of payments for the use of water for all water users is an important first psychological step toward more efficient use of water in Kazakstan.[21] While the original draft contained clear provisions for cost-recovery for the water system in Kazakstan, however, the final Resolution is less explicit on the link between water charges and actual costs for operation, maintenance, and administration of the water system. Instead, it states that "the objective of introducing payment for the use of water resources is the recovery of costs [required] for the restoration [replacement] and protection of water resources, the provision of a stimulant for rational water use, [and] for efficient management of water resources, and the reduction of harmful effects of waters on the natural environment" (Section I, Article 3).

The Resolution does not clearly explain what exactly "the restoration [replacement] and protection of water resources" includes. There was considerable divergence of interpretation even within the inter-agency Working Group. Some members argued that the phrase should be read to include all operation, maintenance, administration, and related costs for all water systems in Kazakstan. Several key members, however, continued to look upon the "charges for water use" established by the final Resolution as primarily "charges for water as a natural resource." As such, they would be similar to the "royalties" on groundwater resources which the (former) Ministry of Geology had been levying. "Charges for water use" could then also be described as a general "water tax," with the stated intention (but little more than that) of using its revenues for water-related tasks. This interpretation, combined with the already existing resistance to the very introduction of water charges, especially in the agricultural sector, may make an eventual, even gradual move towards real cost recovery in the future very difficult to achieve, as complaints about "double payment" for water will indeed be hard to counter.

3.6 Timing of Implementation

Unlike the original draft, the final Resolution does not contain a stated commitment to "a gradual introduction of water charges." In order to soften the impact of new payments on poorer sectors of society, the earlier draft had envisaged a three-stage transition period for the next few years, with an increase of water charge rates up to the "normative level" only in the third stage. It had also provided for an annual review and annual inflation-indexing of the rates (Sarsembekov, [19]). This staged approach to implementation was meant to reduce the Committee for Water Resources' dependence on government subsidies and achieve long-term financial self-sufficiency for the water sector without placing an undue burden on the poor.[22]

While the actual rates defined in the final Resolution correspond to those of the April draft, they are no longer explicitly referred to as transitional rates, as they were in the draft document, which had specified the rates as "valid for 1997." As the rates specified in the final Resolution continue to be well below the levels needed to recover basic operating costs (not to mention the need to generate a surplus for

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[21] Service charges for the release and delivery of irrigation water by local (raion) water management authorities amount to between Tenge 0. 50/m^3 for free-running water to Tenge 5. 00/m^3 for diverted (pumped) water in some areas (K. Kudaybergenov [12]). The Government Resolution of 07 August 1997 sets average water charges for agricultural users at Tenge 0. 03/m^3. For a farmer with 10 hectares of irrigated land who uses 10,000 m^3 of water per hectare per season, for example, the annual water bill for both service charges and water charges will therefore amount to between Tenge 53,000.00 and Tenge 503,000.00. In 1997 the exchange rate was approximately US $1. 00 = T 75. 00, so that the example would amount to an annual water charge of between U$ 706.00 and U$ 6,706.00. The share of the new water charge in the total water bill would be between a high of 5. 7 percent for free-running water and a low of 0. 6 percent for diverted water.

[22] Note that the inter-agency Working Group did *not* aim for a complete termination of all government transfers to the water sector, for many government payments are, at closer inspection, not real "subsidies" at all. "[I]f 'subsidies' are eliminated before it is determined what constitutes a subsidy and what constitutes legitimate cost sharing on the basis of benefits received, there is a very good chance of 'throwing out the baby with the bathwater'. Not all government expenditures for management, operation, and maintenance of water supply and delivery systems are subsidies. It is quite appropriate for the general public to participate in providing such expenditures through contributions through the government budget in return for the indirect benefits that the general public receives from the water supply system (A. Hutchens, [6]).

investment in rehabilitation and new construction), further doubt is cast on the prospects for eventual full recovery of costs.

3.7 Use of Charge Revenues

Unlike the April draft, the final Resolution does not provide for a separate fund for revenues from water charges. Realizing the need for increased transparency in the collection and use of water charges, and mindful of the fact that for several years many government agencies have frequently been the victims of "spontaneous re-allocations" in the republican (state) budget, the draft document had envisaged a special account for the receipts from payments for water resources. The draft spelled out that revenues from the *base rate* of water charges were to enter the special account of the republican (state) budget and were to be used for republican, basin-wide, and local needs of the water sector. The revenues from the *additional rate* of water charges were to go to local budgets to cover water-related programs and projects (repair and maintenance works, hydrological research, strengthening of institutional capacity, quality monitoring, etc.). In addition, the original draft called for the Committee for Water Resources to allocate the revenues from the base rate of water charges among the relevant government agencies (water management agencies, departments of geology and protection of subsurface resources, hydro-meteorological services) in proportion to the expenses of these agencies.

Both of these ideas (the creation of a special account and the role of the Committee for Water Resources) were successfully resisted by the Ministry of Finance. The final Resolution merely notes that "charges for the use of water resources shall be collected into the republican and/or local budgets in accordance with the law of the Republic of Kazakstan on the republican budget for the respective year" (Section III, Article 12). The Resolution does, however, state that the revenues from water charges shall be used in accordance with Article 48 of the Water Code of the Republic of Kazakstan, which specifies that the receipts from water charges shall be used "for measures for protecting and improving the conditions and restoration of water bodies and water deposits; for providing the population and industries with water; for measures for notifications and the liquidation of harmful impact from water; for the reconstruction, construction and exploitation of water related facilities and mechanisms which are on the balance of the republican budget; for assistance service to victims of accidents on water bodies."

Despite this language, the link between water charges and republican, river basin, oblast, and raion level costs remains ambiguous. There is a thus a real danger that funds earmarked for water-related tasks will continue to be used for what are seen as "more urgent needs" in other sectors of the economy, with a further deterioration of the water infrastructure and of water services the likely result.

4. RECOMMENDATIONS FOR FUTURE ACTION

Overall, it seems fair to say that the ultimately adopted Government Resolution of 07 August 1997 is a "watered-down" version of the draft document presented in early April 1997. This reflects the changes in the relative power of the government agencies which were involved in drafting the Resolution after the government reorganization of early March 1997, particularly the significantly weakened position of the Committee for Water Resources after its subordination to the Ministry of Agriculture and the inclusion of the Ministry of Geology into a new and more assertive Ministry of Energy and Natural Resources. The Ministry of Agriculture lobbied hard, and successfully, for mild treatment of the agricultural sector.

Although the drafters of the original draft had made serious attempts at involving all members of the inter-agency Working Group in the "nitty-gritty" of the drafting and coordination process, with hindsight, and in view of the Ministry of Geology's ultimate authority over groundwaters, a more consistent effort should probably have been made to solicit that agency's support for the Committee for Water Resource's version of the document. This was particularly so as the intention of the drafters was to lay the groundwork for a comprehensive, long-term system of water pricing covering all water sources in the

Republic of Kazakstan.[23]

The dependence of the Central Asian economies on the production of water-intensive agricultural commodities, primarily cotton, makes the introduction of cost-based water prices a politically and socially sensitive issue. Nevertheless, it seems clear that the current system of heavy government subsidization of the water sector in Kazakstan has become unsustainable. A gradual move toward a more realistic system of water pricing, including provisions for increased fiscal and administrative decentralization, a cost-based policy of revenue allocation to water management authorities, and progress toward increased financial self-sufficiency for the water sector as a whole will be inevitable to prevent a further deterioration of water services and the capital stock.

Reform efforts in transitional economies can often greatly benefit from building on existing administrative and management mechanisms. Thus, Kazakstan's existing permitting system for water use might form the basis for a future market for water rights in Kazakstan [11]. Appropriately defined and regulated, the establishment of a system of "tradable water rights," and thereby the introduction of an economic incentive structure for water use, might be a useful instrument for more flexible water management in the future. This is one issue which may offer real opportunities for future technical assistance from the international community [11].

Thorough reform of the system of water management in Kazakstan must also address institutional issues, such as administrative decentralization, privatization, and the use of more flexible management methods (for instance through increased reliance on private sector management contracts). Key government agencies in Kazakstan have shown a strong interest in exploring such issues in more detail. The Committee on Water Resources and the Ministry of Agriculture have taken the lead in the country's ongoing reform of the irrigated agriculture sector (formation of water user associations, hand-over of irrigation systems management, etc.).

The integration of charges for both surface and groundwaters, a clear link of withdrawal (consumption) charges for water to cost recovery in the water sector, and a fuller reflection of the total social costs of the harmful effects of water pollution in pollution charges, will be important next steps in developing a more efficient payment system for water use in Kazakstan. Future assistance to the relevant government agencies (Committee for Water Resources, Ministry of Ecology and Natural Resources) to coordinate and harmonize their charge and pricing policies for water use would be well targeted.

[23] It should be noted, however, that the key passages of the draft document were prepared at just the time of the government reorganization of early March 1996, i.e. at a time when both the Ministry of Geology and the Committee for Water Resources were going through a period of uncertainty and institutional change.

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